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## 9 The elicited oral production of Italian restrictive relative clauses and cleft sentences in typically developing children and children with developmental dyslexia

**Abstract:** We elicited subject and object restrictive relative clauses and subject and object contrastive cleft sentences in Italian-speaking typically developing (TD) children and in a small group of children affected by developmental dyslexia (henceforth DD) or suspected dyslexia (suspDD), i.e. with evident school difficulties reported by their teachers, but without a diagnosis of DD. Our goal was twofold: first, we aimed at comparing TD children with children with DD or suspDD, in order to verify whether and to what extent dyslexia affects the oral production of complex syntactic structures and to find out whether one of the two tested structures is more impaired. Second, we aimed at testing Thompson et al.'s (2003) hierarchy of syntactic complexity, by comparing atypically developing children's behaviour with object relatives and object clefts.

To our knowledge, this is the first study comparing the elicited production of restrictive relatives and contrastive clefts in Italian-speaking children with DD. As has already been shown for Italian by Guasti (2013), Zachou et al. (2013) and Guasti et al. (2015), some children with DD present oral deficits similar to children with Specific Language Impairment (SLI). Therefore, we expect to find a divergent pattern of response in at least some of our children with DD.

Results suggest that although dyslexic children exhibit the same general pattern of answers as their aged-matched children, some differences in the production of relative clauses may be observed. The same is not found for cleft sentences. According to Thompson et al.'s (2003) Complexity Account of syntactic Treatment Efficacy in aphasia (CATE), object relatives are the most difficult sentence structures to compute for aphasic patients, followed by object clefts and object *wh*-questions. Our data show that children with DD follow the same pattern of difficulty.

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# 1 Introduction

In this section, we report the studies conducted so far on the acquisition of relative clauses and cleft sentences. First, we summarize the findings concerning the production and comprehension of relatives in typical and atypical development across languages. Then, we focus on the acquisition of such structure in Italian-speaking children and adults with atypical development (hearing impairment, SLI, DD). Third, we report the acquisition studies on clefts both in typical and atypical development across languages. To our knowledge, our experimental study is the first one analyzing the production of clefts in Italian-speaking children.

## 1.1 The elicited production and comprehension of restrictive relative clauses in typical and atypical development across languages

The acquisition of relative clauses has been an important subject of debate over the last three decades. Hamburger and Crain (1982) demonstrated that when the experimental setting satisfies the right felicity conditions, American children comprehend and produce relative clauses from the age of four. Much more recently, Adani (2011) showed a ceiling performance in the comprehension of subject relatives already in 3-year-olds. At the same time, an asymmetry between subject and object relative clauses has been corroborated by many studies (see Adams 1990; de Villiers et al. 1994; McKee et al. 1998, a. o.), with ORs being acquired later than SRs, at the age of 4–5 (Adani 2011; Friedmann and Novogrodsky 2004) and being still problematic at adolescence (Volpato 2010). As regards the comprehension of relative clauses in atypical development, hearing-impaired children have been shown to perform less accurately than TD children (see De Villiers 1988 for English; Friedmann and Sztermann 2006; Friedmann et al. 2008 for Hebrew; Delage et al. 2008 for French; Volpato and Adani 2009; Volpato 2010, 2012 for Italian). The same was found for children with SLI (see Friedmann and Novogrodsky 2004 for Hebrew), and for children or even adults with DD (see Wiseheart et al. 2009 for young English-speaking adults; Robertson and Joanisse 2010 for English-speaking children with DD or SLI).

As for the production of RCs, investigations on children's spontaneous speech (Diessel and Tomasello 2000) and elicited production experiments (Crain, McKee, and Emiliani 1990; Diessel and Tomasello 2000; Guasti and Cardinaletti 2003) demonstrated that children produce subject (SRs) and object relative

clauses (ORs) from the age of 3–4. Moreover, the subject/object asymmetry typically found in comprehension has been confirmed in production: while children score very high percentages in SRs, they find it more difficult to produce ORs.

After the pioneering experiment of Hamburger and Crain (1982), children's production of relative clauses has been investigated in a number of studies across languages (Labelle 1990 for French; Håkansson and Hansson 2000 for Swedish; McKee, McDaniel, and Snedeker 1998 for English; Novogrodsky and Friedmann 2006 for Hebrew) as well as in Italian (Guasti and Cardinaletti 2003; Utzeri 2006; Belletti and Contemori 2010; Guasti et al. 2012). Utzeri (2006) was the first study adapting Novogrodsky and Friedmann's (2006) Preference Task to elicit Italian RCs in typically developing children. In this experiment, both children (aged 6–11) and adults avoided to relativize the object by turning ORs into SRs. However, whereas children employed several ways of avoiding relativization of the object, adults systematically used passive relative clauses. The same kind of preference has been pointed out in Italian adolescents (Volpato 2010), while children taking part at the same study produced 37% of ORs, including those with resumptive pronouns. Contemori (2011) replicated a subject/object asymmetry in Italian-speaking TD children aged 3;4–8;10 and outlined the emergence of passive at the age of five as a strategy to avoid relativization of the object in line with Utzeri (2006) and Volpato (2010).

The production of RCs has also been widely investigated in language impaired populations (for SLI see Håkansson and Hansson 2000 for Swedish; Stavrakaki 2002 for Greek; Friedmann and Novogrodsky 2004; Novogrodsky and Friedmann 2006 for Hebrew; for hearing-impaired children (henceforth HI) see Friedmann et al. 2008 for Hebrew). Stavrakaki (2002) investigated the production of RCs in a group of Greek-speaking SLI children, aged 5;4–9;4, compared to a group of age-matched TD children. The performance of SLI participants was significantly worse than TD participants, particularly in ORs. SLI children also differed from TD for their preference for simple SVO sentences instead of relative clauses. Novogrodsky and Friedmann (2006) compared the performance of Hebrew-speaking SLI children (9;3–14;6) with a group of younger typically developing children (7;6–11;0). Results showed that TD children had no difficulties with SRs (98%) and ORs (94%). On the contrary, SLI participants produced significantly fewer RCs. Friedmann et al. (2008) elicited relative clauses in HI children (7;7–11;3) and a control group of age-matched children 7;5–11;0. As a whole, the HI children doubled the relative head 3% of times and used a resumptive pronoun in the subject position 8% of times. When ORs were targeted, they often produced an OR with a resumptive pronoun (42%), or they tried to utter an OR, but ended up with an ungrammatical sentence (24%).

## 1.2 The elicited production and comprehension of restrictive relative clauses in Italian children with atypical development

As for atypically developing Italian-speaking children, Contemori and Garraffa (2010) elicited RCs in four pre-school aged children with SLI (4;5–5;9) by using a picture description, a preference, and a repetition task. In the elicited production tasks, SLI children produced significantly fewer target SRs (13% vs. 85%) and ORs (3% vs. 22%). They also repeated significantly fewer target SRs (0,8%) and ORs (1,6%) than controls (87% and 84% respectively). In half of the cases, the SLI participants gave no answer both when SRs and ORs were elicited. The most common errors were the omission of the complementizer and the use of declarative sentences. Crucially, declarative sentences were absent in older TD children and marginally present in younger ones, and complementizer omission was not attested in TD. A study on Italian children with hearing-impairment was conducted by Volpato (2010), who elicited RCs using the Preference Task in children with cochlear implant. She found a lower level of accuracy for both SRs (88% vs. 99%) and ORs (6% vs. 14%) than in TD children. Moreover, children with cochlear implant preferred to produce clitic (43%) and DP resumptive ORs (32%), instead of gap ORs (24%).

As for children with DD, there are few studies analyzing the production and comprehension of complex syntactic structures such as relative clauses. Even though Dyslexia is a disorder in learning how to read adequately, many studies also report difficulties in the comprehension and/or production of complex syntactic constructions, such as relative clauses and passive sentences (Mann et al. 1984; Stein et al. 1984; Barshalom et al. 1993; Wiseheart et al. 2009; Robertson and Joanisse 2010) and suggest an overlap with Specific Language Impairment (Bishop and Snowling 2004; Catts and Kahmi 2005; Pennington and Bishop 2009; Carroll and Meyers 2010, among others). In line with these studies, Guasti (2013) and Guasti et al. (2015) suggested that in some Italian-speaking children with DD, comorbidity with Specific Language Impairment is found. More specifically, impaired oral production of clitic pronouns (also see Zachou et al. 2013), wh-questions and relative clauses has been detected in some of the children with DD participating in Guasti's (2013) and Guasti et al.'s (2015) experiments. Oral comprehension of object restrictive relative clauses has been found to be problematic for Italian-speaking children with DD at 10 years (Arosio et al. 2014). Oral comprehension and production of object relative clauses have been found to be problematic in some of the 10 University students with a diagnosis of dyslexia studied by Cardinaletti and Volpato (2011, 2015).

We recently investigated the oral production of relative clauses in Italian children with DD, either diagnosed or suspected, and we found it to be more problematic for dyslexic children, who produced fewer gap ORs and more DP resumptive ORs and SVO sentences instead of the targeted gap ORs (see Pivi 2014; Pivi & Del Puppo 2015).

### 1.3 The acquisition of cleft sentences in typical and atypical development across languages

In contrast with the huge amount of literature addressing children's mastery of restrictive relatives, there are only few data available on the acquisition of cleft sentences; interestingly, they recall the subject-object asymmetry found with relatives. Observations from young children's samples of spontaneous language have shown that clefts emerge around the age of 2 (Demuth 1984; Labelle 1990; Santos 2006) and that subject clefts are produced earlier and more often than object clefts (Santos 2006). A subject-object asymmetry is reported in both comprehension and production in experimental research: Lempert and Kinsbourne (1980) found that subject clefts are accurately comprehended 96% of times by English-speaking children, while object clefts are comprehended at the rate of 71%. Studying on-line processing and accuracy levels in the comprehension of complex sentences in English-speaking children and adolescents, Dick et al. (2004) reported a longer and steeper developmental trajectory for object clefts with respect to subject ones. Regarding production, Hupet and Tilmant (1989) elicited considerable percentages of subject clefts in French children aged 4 to 10 years, but only a few object clefts (on average, 58% vs. 9%). More recently, Santos, Lobo, and Soares (2013) and Lobo, Santos and Soares (2015) found almost no production of object and adjunct clefts vs. production of subject clefts in European Portuguese-speaking young children and adults. Both French children and Portuguese speakers from around the age of 5 years prefer to use simple SVO sentences instead of object clefts. As for atypically developing children, Dick et al. (2004) showed that, though displaying the same subject-object asymmetry observed in their typically developing peers, English-speaking children with SLI aged 7 to 15 years are less accurate in comprehending contrastive object clefts. Furthermore, 10–12 y.o. French-speaking children with SLI spontaneously produce a high amount of cleft and presentational structures, but much less relative clauses than their aged-matched children (Hamann and Tuller 2015).

## 1.4 Clefts and relatives

Restricted relative clauses as in (1) and cleft sentences as in (2) display some relevant similarities in Italian: they are introduced by the same complementizer *che* ('that') and involve the same type of antecedent-gap relation as relative clauses, whereby a (focus) constituent is related to a gap in its first merge position; moreover, when extracting the object, clefts contain an intervening subject between the first and the last merge position of the moved object, which may give rise to a disturbing intervention effect, if the subject and the object constituents share a lexical restriction (Friedmann, Belletti, and Rizzi 2009):

### OBJECT RELATIVE

- (1) *Mi piace il pulcino che il gatto spinge.*  
 'I like best the chick that the cat is pushing'.  
 [<sub>DP</sub> the [<sub>CP</sub> [<sub>NP</sub> chick] [that the cat is pushing <the chick>]]]

### OBJECT CONTRASTIVE CLEFT

- (2) *È il PULCINO che il gatto spinge.*  
 'It is the CHICK that the cat is pushing'.  
 be [<sub>CP</sub> [<sub>FocP</sub> the chick [<sub>FinP</sub> that the cat is pushing <the chick>]]]

The account proposed by Friedmann, Belletti, and Rizzi has extensively been used in the literature to explain the asymmetry found crosslinguistically between subject and object relatives (see section 1.1) and subject and object *which*-questions in comprehension and production; such account could be extended to argument contrastive clefts (see Del Puppo, Pivi, and Cardinaletti 2013 for a discussion).

Despite the similarities shared by argumental clefts and relatives, the psycholinguistic literature has shown that cleft structures are less complex to compute than relative ones, because they involve only one lexical verb assigning theta roles (CATE: Thompson et al. 2003; Thompson, Shapiro 2007; Gordon 2001). More recently, Hamann & Tuller (2015) have observed that the depth of embedding of the subordinate CP in clefts and relatives is the crucial factor differentiating the two structures: clefts do not involve embedding inside a DP, whereas relatives do.

## 1.5 Aim of the study

The aim of this study is to contribute to the current debate in the following respects: first, by analyzing the oral production by children with developmental

dyslexia, who show some atypical behavior in oral language (see section 1.3); second, by comparing the performance of the same children in the production of relative clauses and cleft sentences, which share some important syntactic aspects (see section 1.4); third, by checking whether one of the two structures is more impaired than the other (see section 1.4). To our knowledge, this is the first study comparing the oral production of subject/object relative clauses and subject/object clefts in Italian-speaking children with DD.

## 2 The experiment

### 2.1 The Preference Task

#### 2.1.1 Participants

The participants were 116 typically developing children aged 6–10, divided into four groups according to age (G1, G2, G3, G4), 10 adults with a mean age of 23;8 (G5), 14 children with a diagnosis of DD (6 children with a mean age of 8;05 and 8 children with a mean age of 10;1)<sup>1</sup>, and 4 children with suspected DD (mean age 6;9), who had evident school difficulties reported by their teachers but could not receive a diagnosis of DD yet, because too young.

**Table 1:** Preference Task: participants

Age groups	N° of participants	Mean age	SD (months)
G1 (6–6;11)	19	6;6	2,1
G2 (7–7;11)	33	7;4	3,6
G3 (8–8;11)	27	8;5	3,4
G4 (9–10;4)	37	9;6	4,16
G5 (19–30)	10	23;8	3,7
Young Susp DD (6;7–7;1)	4	6;9	3,1
Young DD (8;3–8;8)	6	8;5	1,3
Old DD (9;5–11)	8	10;1	5,3

<sup>1</sup> The older dyslexic children were administered the tasks at an educational center for students with learning disabilities; the children all had a diagnosis of developmental dyslexia issued from public or private health professionals as the law 170/2010 indicates. Young DD children were tested at the same schools where TD children were tested; the school communicated us verbally that the children taken into consideration were dyslexic, but for privacy reasons, detailed data were not accessible to us.

### 2.1.2 Materials and methods

We elicited subject and object relative clauses adapting and slightly modifying the Preference Production Task designed by Friedmann and Szterman (2006) and Novogrodsky and Friedmann (2006) for Hebrew and often used for experiments on Italian (Utzeri 2006; Belletti and Contemori 2010, 2012; Volpato 2010; Contemori and Garraffa 2010; Contemori 2011). Differently from Belletti and Contemori (2010) and Contemori (2011), we administered the elicitation task to older children, aged 6–10, in order to collect new data on the acquisition of Italian restrictive relative clauses.

Each child was presented a Power Point Presentation with drawings and a video-tape recorded voice of a puppet eliciting the target sentence. For each stimulus, the characters were first introduced in some pictures; then, two pictures were presented to the child showing either different characters performing the same action (change of agent or patient condition) or the same characters performing two different actions on a patient (change of action condition). The child had to choose one of the two options, telling the experimenter which character he/she liked best. Since the child was told to begin his/her sentence with ‘I like best...’, he/she was forced to produce a relative clause to complete the sentence in the most felicitous way. There were 24 items per participant, twelve eliciting SRs and twelve eliciting ORs, presented in a random order. All of the events were semantically reversible and involved animate characters. The following transitive, actional verbs were employed: *lavare, sporcare, salutare, vedere, baciare, fermare, inseguire, toccare, sollevare, guardare, mordere, accarezzare, catturare, sgridare, premiare, pettinare, tirare, mandare via* (wash, soil, greet, see, kiss, halt, chase, touch, lift up, look at, bite, caress, catch, scold, reward, comb, pull, send away).

SRs were elicited in two different conditions: 6 SRs presented a change of action condition (3), whereas other 6 SRs were elicited in a change of patient condition (4).

- (3) PUPPET: ‘There are two doctors and two grandmothers. A doctor is greeting the grandmothers, the other doctor is attending the grandmothers. Which doctor do you like?’.

EXPERIMENTER: Start with ‘I like...’.

TARGET (*Mi piace*) *il dottore che visita/saluta le nonne.*

‘(I like) the doctor that is attending/greeting the grandmothers.’





Figure 1



Figure 2



Figure 3



Figure 4

- (4) PUPPET: ‘There are two traffic policemen, two dogs and two lions.  
A policeman is halting the dogs, the other policeman is halting the lions.  
Which policeman do you like?’.

EXPERIMENTER Start with ‘I like...’.

TARGET (Mi piace) il vigile che ferma i leoni/ i cani.  
‘(I like) the policeman that is halting the lions/the dogs’.



Figure 5



Figure 6



Figure 7



Figure 8

ORs were elicited in two different conditions: 6 ORs in a change of agent condition (5), and 6 ORs in a change of action condition (6).

- (5) PUPPET: ‘There are two children, two hairdressers and two dogs. The children are combing one dog, the hairdressers are combing the other dog. Which dog do you like?’.

EXPERIMENTER Start with ‘I like...’.

TARGET (Mi piace) il cane che pettinano  
(I like) the dog that are combing  
i bambini/i barbieri.  
the children/the hairdressers.

‘(I like) the dog that the children/the hairdressers are combing’.



Figure 9

Figure 10

Figure 11

Figure 12

Figure 13

- (6) PUPPET: ‘There are two grandparents and two elephants. The grandparents are lifting up one elephant and are staring at the other elephant. Which elephant do you like?’.

EXP. Start with ‘I like...’

TARGET (*Mi piace*) *l’elefante* *che* (*i nonni*)  
 ‘(I like) the elephant that (the grandparents)  
*sollevano/guardano.*  
 are lifting up/staring at’.



Figure 14



Figure 15



Figure 16

We also included 12 fillers, which consisted in very simple questions like (7), and were used to prevent the child from adopting learning strategies or losing concentration during the experimental session.



Figure 17

- (7) PUPPET: ‘What is the zebra doing?’

TARGET (*La zebra*) *mangia* *la pizza.*  
 ‘(The zebra) is eating pizza’.

The elicitation task was administered in two sessions, lasting approximately 25/30 minutes each. Each session was tape-recorded and later transcribed. Before beginning the experimental sessions, we explained the main characteristics of the game. Children were tested in a quiet room at school, no time limit and no feedback were given by the experimenters. Adults were tested at home or at university.

### 2.1.3 Coding

As regards SRs production, we counted as correct those sentences with a gap in the first merge position of the extracted subject constituent, having either a lexical DP (8) or the demonstrative pronoun *quello* (9) as head of the RC.

(8) *Mi piace il bambino che saluta le mucche.* (8;00)  
 ‘I like the child that is greeting the cows’.

(9) *Quello che saluta i cani.* (6;04)  
 ‘The one that is greeting the dogs’.

On the other hand, we considered as ungrammatical SRs with subject resumption (10), since resumption is not accepted in Italian as a standard strategy to form relative clauses.

(10) *A me piace quello che il bambino saluta le mucche.* (8;03)  
 ‘I like the one that the boy is greeting the cows’.

TARGET: *(Mi piace) il bambino che saluta le mucche/i cani.*  
 ‘(I like) the boy that is greeting the cows/the dogs’.

As regards ORs production, we counted as correct the ones with a gap in the position of the extracted object constituent, either with a lexical DP (11) or *quello* (12) as relative head, whereas we did not include ORs with a resumptive clitic pronoun (13) or a resumptive DP located in the position where a gap is required (14).

(11) *Mi piace il gatto che stanno accarezzando i bambini.* (9;11)  
 I like the cat that are caressing the children.  
 ‘I like the cat that the children are caressing’.

- (12) *Quella che stanno baciando i cani.* (8;05)  
 the one that are kissing the dogs.  
 ‘The one that the dogs are kissing’.

- (13) *Mi piace il cane che lo lavano.*  
 I like the dog that CLIT<sub>male sing</sub> are washing.  
 ‘I like the dog that they are washing’.

TARGET *(Mi piace) il cane che i papà lavano/sporcano.*  
 ‘(I like) the dog that the fathers are washing/soiling’.

- (14) *Quella che i bambini guardano la scimmia.* (6;06)  
 ‘The one that the children are looking at the monkey’.

TARGET *(Mi piace) la scimmia che guardano i bambini/i gatti.*  
 (I like) the monkey that are looking at the children/the cats.  
 ‘(I like) the monkey that the children/the cats are looking at’.

Children also produced passive relatives (15), or used *wh*-fillers such as *dove/quando/in cui* instead of the complementizer *che* ((16), coded as ‘other’). Some of their utterances resulted in ungrammatical sentences (17), or in subject relatives (ORs > SRs), either through head inversion (18) or change of the verb (19).

- (15) *Mi piace il cane che viene pettinato dai barbieri.* (8;00)  
 ‘I like the dog that is being combed by the hairdressers’.

TARGET *(Mi piace) il cane che pettinano i bambini/i barbieri.*  
 (I like) the dog that are combing the children/the hairdressers.  
 ‘(I like) the dog that the children/the hairdressers are combing’.

- (16) *Quello dove i vigili salutano la maestra.* (7;04)  
 ‘The one where the policemen are greeting the teacher’.

TARGET *(Mi piace) la maestra che i vigili fermano/salutano.*  
 ‘(I like) the teacher that the policemen are halting/greeting’.

- (17) *A me piace quella che sono baciando i nonni.* (8;05)  
 ‘I like the one that are kissing the grandparents’.

TARGET *(Mi piace) la bambina che baciano i nonni/i cani.*  
 (I like) the girl that are kissing the dogs/the grandparents.  
 ‘(I like) the girl that the dogs/the grandparents are kissing’.

(18) *I gatti che guardano la scimmia.* (7;03)

‘The cats that are looking at the monkey’.

TARGET (*Mi piace*) *la scimmia che guardano i gatti/i bambini.*

(I like) the monkey that are looking at the cats/the children.

‘(I like) the monkey that the cats/the children are looking at’.

(19) *Il vigile che scappa dai cani.* (7;01)

‘The policeman that is running away from the dogs’.

TARGET (*Mi piace*) *il vigile che i cani mordono/inseguono.*

‘(I like) the policeman that the dogs are biting/chasing’.

## 2.2 The Cleft Task

### 2.2.1 Participants

Participants were the same as in the Preference Task. We administered two different versions of the Cleft Task, one involving the use of priming sentences, the other one not involving them. Therefore, two subgroups were created for every group of participants (see Table 2 and Table 3).

**Table 2:** Cleft Task, non-priming experiment: participants

Age groups	N° of participants	Mean age	SD (months)
G1 (6–6;11)	8	6;6	2
G2 (7–7;11)	15	7;5	3,5
G3 (8–8;11)	14	8;4	3,4
G4 (9–10;4)	18	9;6	4
G5 (20–25)	7	23;1	37
Young Susp DD (6;7–7;1)	3	6;10	2
Young DD (8;5–8;8)	3	8;6	1,3
Old DD (9;9–10;8)	5	10;1	3,4

**Table 3:** Cleft Task, priming experiment: participants

Age groups	N° of participants	Mean age	SD (months)
G1 (6–6;11)	11	6;7	1,8
G2 (7–7;11)	18	7;5	3,4
G3 (8–8;11)	13	8;6	3,2
G4 (9–10;4)	19	9;6	4
G5 (19–30)	3	24;3	48
Young Susp DD (6;9)	1	6;9	0
Young DD (8;3–8;6)	3	8;4	1,3
OldDD (9;5–11)	5	10	7,3

### 2.2.2 Materials and method

The task was inspired by the elicited production experiment carried out by Hupet and Tilmant (1989) on French. For each participant, 12 subject-extracted cleft sentences and 12 object-extracted cleft sentences were targeted through the use of a Power Point Presentation. They were meant to contrast agents and patients involved in events described by two puppets. The experimental trials were descriptions of depicted events involving transitive verbs (*toccare, tirare, guardare, inseguire, picchiare, pettinare, portare via, sollevare, lavare, graffiare, spaventare, fermare, mordere, spingere, colpire*; touch, pull, look at, chase, beat up, comb, carry away, lift up, wash, scratch, scare, stop, bite, push, hit). Agents and patients were animal characters. In each picture, one or two animals were performing an action on another one; moreover, one or two extra characters were present in the pictures without being involved in the events. Two puppets sometimes described the events by replacing the correct agent or patient with the uninvolved character(s); participants were requested to correct the puppets when they were wrong, because a puppet named Poldo, who was not able to speak Italian and was present in the setting, wanted to listen to the other puppets describing the pictures, to learn some Italian. In order to help Poldo learn correct descriptions of the events, children were required to listen carefully to the puppets and to correct them when necessary. (20) and (21) are examples of stimuli that aimed at eliciting subject and object clefts, respectively. As said above, we tested two conditions: priming and non-priming. We decided to introduce a priming device in order to induce participants to employ cleft structures in cases, such as the ones presented here, where simple, non cleft SVO sentences are allowed as well, i.e. in the context of correction of a preceding claim. The non-priming and the priming experiments were identical, except for the fact that in the priming version, participants listened to puppet A reply to puppet B by using a cleft sentence (in brackets in (20) and (21)).

(20) *Elicitation of a subject cleft*

PUPPET A: *Qui ci sono tre animali giocherelloni: un uccellino, un elefante e una farfalla.*

'Here, there are three playful animals: a little bird, an elephant, and a butterfly.'

PUPPET B: *E la farfalla solleva l'elefante!*

'And the butterfly is lifting the elephant up!'

(PUPPET A: *Eh sì, è proprio la farfalla che solleva l'elefante!*

'Yes, it is the BUTTERFLY that is lifting the elephant up!')

EXPERIMENTER: *Ha detto bene?*  
 ‘Is he right?’  
 CHILD: *No!*  
 (EXPERIMENTER: *Perché no?*  
 ‘Why not?’)

(20a) TARGET *Perché è l’UCCELLINO che solleva l’elefante!*  
 ‘Because it is the BIRD that is lifting the elephant up!’



Figure 18

(21) *Elicitation of an object cleft*

PUPPET A: *Qui ci sono degli animali birichini: due scoiattoli, due orsi e una giraffa.*

‘Here, there are some funny animals: two squirrels, two bears, and a giraffe.’

PUPPET B: *E la giraffa pettina gli scoiattoli!*

‘And the giraffe is combing the squirrels!’

(PUPPET A: *Eh sì, sono proprio gli scoiattoli che la giraffa pettina!*)

‘Yes, it is the squirrels that the giraffe is combing!’)

EXPERIMENTER: *Ha detto bene?*  
 ‘Is he right?’

CHILD: *No!*

(EXPERIMENTER: *Perché no?*  
 ‘Why not?’)



Figure 19

(21a) TARGET: *Perché sono gli ORSI che la giraffa pettina!*  
 ‘Because it is the BEARS that the giraffe is combing!’

Eight additional stimuli were included as correct descriptions of events (sometimes, puppets did not make mistakes). Moreover, we included eighteen filler items: children had to answer questions about what was going on in some pictures. In all, children were exposed to fifty trials. The puppets' descriptions and questions were pre-recorded, to ensure that any participant listened to the very same intonation patterns.

### 2.2.3 Coding

We coded as correct those sentences corresponding to the targeted ones (see (20a) and (21a)). Simple SVO sentences as in (22) were the most frequent answering strategy in each group. Sometimes, participants correctly used a null subject, thus lexicalizing only the verb and its complement (VO). These were counted together with simple SVO structures. A few bare objects were provided by children as a form for correction: such productions were collapsed into the category VO, because very infrequent. The category 'other correct' includes some presentational-like cleft sentences (23), sporadic syntactic structures like the one in (24), sentences predicating something about the extra characters (25), and appropriate productions whose deviations from the target were due to flaws in the pictures.

(...) *E la giraffa pettina gli scoiattoli!*

PUPPET: 'And the giraffe is combing the squirrels!'

(22) *No, la giraffa pettina gli orsi/gli ORSI.*

CHILD: 'No, the giraffe is combing the bears/the BEARS'.

(23) *No, è la giraffa che pettina gli orsi.*

'No, there/it is the giraffe that is combing the bears'.

(24) *No pettina gli ORSI, la giraffa.*

No is combing the BEARS the giraffe.

'No, the giraffe is combing the BEARS'.

(25) *No, gli scoiattoli sono distanti.*

'No, the squirrels are distant'.

Incorrect answers were coded under 'wrong': children sometimes failed to notice the puppets' mistakes, or they used a wrong intonational pattern; furthermore, some unclear or irrelevant productions were collected.



## 2.3 The delayed-repetition task

### 2.3.1 Participants

In the repetition task we included those participants who had heard the non-priming version of the Cleft Task (see table 2), since the priming version could have helped the child retrieve the targeted structure heard in the elicited production task.

### 2.3.2 Materials and methods

We asked the child to repeat the 12 ORs and 12 OCs that were tested in the elicitation task, plus 5 filler and 6 passive sentences, by using a Power Point Presentation. Each participant was told that one of the puppet had done the same game carried out by the children, and he had recorded himself. Now he/she had to listen carefully to him, count to 3 with a loud voice and then repeat exactly the sentence produced by the puppet. In figures (20) and (21), we report an example of the task when an OR was targeted: the child saw both pictures but heard only the option preferred by the puppet (26). We included both pictures in order to make the task felicitous.

- (26) *Mi piace la tigre che vedono i bambini.*  
 I like the tiger that are looking at the children.  
 'I like the tiger that the children are looking at'.



Figure 20



Figure 21

In (27), we present an example of an item eliciting the repetition of an OC.

- (27) *Perché sono gli ORSI che la giraffa pettina!*  
 'Because it is the BEARS that the giraffe is combing!'



Figure 22

### 2.3.3 Coding

We counted as correct those sentences with the same syntactic construction as the targeted ones: namely, gap ORs (28) and OCs (29). Since we wanted to focus on the children's ability to reconstruct the relative clause from a syntactic point of view, we also included answers with lexical substitutions (30).

(28) *Mi piace il gatto che stanno accarezzando i bambini.*  
 I like the cat that are caressing the children  
 'I like the cat that the children are caressing'.

(29) *È il GATTO che il pinguino guarda. (8;08)*  
 'It is the CAT that the penguin is looking at'.

(30) *Mi piace il gatto che i bambini fermano. (9;11)*  
 'I like the cat that the children are halting'.

TARGET: *(Mi piace) il gatto che i bambini mandano via.*  
 '(I like) the cat that the children are chasing away'.

## 3 Results

### 3.1 Results of the Preference Task

Results confirmed the well-known and marked asymmetry between SRs and ORs production attested in previous studies on Italian (Guasti and Cardinaletti 2003; Utzeri 2006; Belletti and Contemori 2010; Volpato 2010; Contemori and Garraffa 2010, 2013; Contemori 2011; Guasti et al. 2012) and cross-linguistically (English: Hamburger and Crain 1982; McKee et al. 1998; French: Guasti and Cardinaletti 2003; Labelle 1990; Hebrew: Novogrodzky and Friedmann, 2006; Friedmann et al. 2008; Greek: Stavrakaki 2001; Swedish: Håkansson and Hansson 2000,

among many others). While children found it difficult to produce ORs and adults systematically avoided them using alternative structures, all participants produced very high percentages of SRs, almost 100% (see table 4). Our results confirmed that Italian-speaking children master SRs at least from the age of 6, showing no differences between age groups.

**Table 4:** Percentages of responses elicited in the subject condition

	G1 6;6	G2 7;4	G3 8;5	G4 9;6	G5 23;8	Y suspDD 6;9	YDD 8;5	ODD 10;1
SR	97 (5,8)	98 (5)	97 (7,5)	97 (6,7)	98 (3,3)	94 (5)	94 (10)	92* (6,7)
SVO	0	0	0	0	0	4 (4,2)	0	0
DP RESUMP	0	0	0	0	0	2 (4,2)	1 (3,3)	0
OTHER	3 (4,2)	2 (5)	3 (8,3)	3 (6,7)	2 (3,3)	0	5 (10)	8 (6,7)

SR = subject relatives, SVO = simple sentence, DP resump = relative clause with resumptive DP. We report within brackets the percentages of the standard deviation values.

As shown in table 4, older children with DD uttered 92% SRs. By using R software, we ran a repeated measure logistic regression to see whether such difference was significant: older children with DD uttered significantly less SRs compared to their TD peers (Wald  $Z = -2.599$ ,  $p < 0.01$ ). Children with suspected/diagnosed DD also produced some SRs with DP resumption (31), which were absent in the production of TD children.

(31) *A me piace quello che il bambino saluta le mucche.*  
 ‘I like the one that the boy is greeting the cows’.

TARGET: *(Mi piace) il bambino che saluta le mucche.*  
 ‘(I like) the boy that is greeting the cows’.

Moreover, the production of SVO sentences instead of subject relative clauses was only found in suspected dyslexics (4%) (32).

(32) *La maestra premia i bambini.*  
 ‘The teacher is awarding the children’.

TARGET: *(Mi piace) la maestra che premia i bambini.*  
 ‘(I like) the teacher that is awarding the children’.

As regards the elicited production of ORs, TD children produced 333 gap object relatives (24%), out of 1392 items (see table 5). They also uttered 87 clitic (6%) and 70 DP resumptive ORs (5%). The percentage of ORs produced by adults

is much lower (only 2 sentences, 2%), since they preferred passive relatives, attested at 94% of the total amount of items, whereas children produced a wider range of answer typologies.

**Table 5:** Percentages of responses elicited in the object condition

	<b>G1</b> <b>6;6</b>	<b>G2</b> <b>7;4</b>	<b>G3</b> <b>8;5</b>	<b>G4</b> <b>9;6</b>	<b>G5</b> <b>23;8</b>	<b>Y suspDD</b> <b>6;9</b>	<b>Y DD</b> <b>8;5</b>	<b>ODD</b> <b>10;1</b>
OR	18 (28,3)	27 (29)	14 (20)	32 (40)	2 (2,5)	2 (4,2)	6 (6,7)	10 (25,8)
PASSIVE	18 (27,5)	19 (31,2)	41 (40)	36 (41,7)	94 (7,5)	13 (29,2)	25 (40)	32 (41,2)
DP RESUMP	9 (15,8)	8 (18,3)	3 (9,2)	2 (5,8)	0	<b>21</b> (38,3)	<b>24</b> (31,7)	3 (11,7)
CLIT RESUMP	7 (7,5)	10 (17,5)	7 (19,2)	3 (7,5)	0	15 (4,2)	10 (9,2)	7 (9,2)
INVERSION	26 (25)	22 (31,2)	18 (30)	14 (23,3)	2 (6,7)	10 (10,8)	24 (26,7)	26 (39,2)
SVO	6 (10,0)	0,2 (1,7)	1,2 (3,3)	0,2 (1,7)	0	<b>23</b> (33,3)	1 (6,7)	1 (3,3)
OR>SR	0,4 (19,3)	1,8 (19,2)	1,2 (18,3)	2 (16,7)	2 (10,8)	4 (8,1)	7 (6,7)	5 (3,3)
AGRAMM	3 (5,7)	1,5 (3,3)	1,5 (4,2)	0,2 (1,7)	0	4 (4,2)	0	2 (6,7)
OTHER	22,6 (19,3)	10,5 (19,2)	13,1 (18,3)	10,6 (10,8)	0	12 (33,3)	3 (3,3)	17 (13,3)

OR = object relative; Passive = passive relative; DP resumptions = relative clause with resumptive DP; clitic resumption = relative clause with resumptive clitic pronoun; inversion = object relative turned into subject relative through head inversion; SVO = simple sentence; OR > SR = object relative turned into subject relative through change of the verb; agramm = ungrammatical sentence. (Standard deviation in percentage points)

In TD children, the total amount of gap ORs increases with age (from 18% to 32%), with the exception of 8-year-olds, who produced the fewest gap object relatives (14%). G4 was significantly more accurate than G2 in target ORs (Wald  $Z = 3.966$ ,  $p < 0.001$ ). Conversely, the total amount of resumptive object relatives decreases with age, both in the case of clitic and DP resumptives, suggesting that this strategy, which is not grammatical in standard Italian, may be preferred by younger children.

Like TD children, language impaired participants produced many more SRs than ORs. Indeed, diagnosed dyslexics were significantly more accurate in SRs

than ORs production (Wald  $Z = 7.084$ ,  $p < 0.001$ ), as well as young suspected dyslexics (Wald  $Z = 7.142$ ,  $p < 0.001$ ).

Comparing typical and atypical development, we notice that non TD children tended to produce lower percentages of gap ORs, whereas young children with DD and children with suspected DD uttered a considerable amount of object relatives with DP resumption (24% and 21% respectively; young DD vs. G3: Wald  $Z = 2.142$ ,  $p < 0.05$ ). Moreover, young children with suspected DD produced many more SVO sentences, which are computationally less demanding structures compared to ORs and passive relatives. However, generally speaking, the strategies adopted by non TD children did not differ from those of TD children: both groups prefer to produce passive relatives instead of ORs with the increase of age (32% in older DD compared to 13% in young DD), produced similar percentages of clitic resumptive relatives, inversions, ORs turned into SRs and rarely produced ungrammatical sentences. The production of DP resumptive relatives in the group of older children with DD (only 3%) is also comparable to the one in TD children.

### 3.2 Results of the Cleft Task

In tables 6–9, we report the results of the Cleft Task in both conditions. As regards the production of subject clefts in the priming condition, we see that each group of participants, with the exception of young suspected dyslexics, uttered a consistent amount of targeted sentences. The most frequent alternative strategy was the production of SVO sentences with focalized subjects, whose percentages are, again, very similar across groups. In the non-priming condition, children produced fewer subject clefts (Wald  $Z = -4.833$ ,  $p < 0.001$ ), whereas the production of SVO sentences was more consistent here.

Looking at OCs production in both conditions, a strong subject/object asymmetry emerges in each group of participants: in the non-priming condition, OCs were not produced at all, whereas only a very small amount of OCs were used by TD children in the priming condition (15 sentences). Non-TD children used OCs neither in the priming, nor in the non-priming condition. However, considered the small amount of OCs produced by TD children, no considerable different pattern of response between the two groups emerges. When OCs were targeted, as in the case of SCs, SVO sentences were the preferred answering strategy for all groups of TD and non TD children.

**Table 6:** Percentages of SCs in non-priming condition

<b>SUBJECT CLEFTS IN NON-PRIMING CONDITION</b>		
	<b>TARGET</b>	<b>SVO</b>
6;6	19 (34,2)	74 (34,2)
7;5	34 (39,1)	54 (38,3)
8;4	37 (40)	54 (39,2)
9;6	49 (35)	43 (35,8)
23;1	38 (35)	50 (40)
Y SUSP 6;10	36 (0)	47 (0)
Y DD 8;6	25 (29,2)	58 (30)
ODD 10;1	62 (29,2)	23 (20)

Target = subject cleft; SVO = (S)VO simple sentence  
We report within brackets the standard deviation values

**Table 7:** Percentages of SCs in priming condition

<b>SUBJECT CLEFTS IN PRIMING CONDITION</b>		
	<b>TARGET</b>	<b>SVO</b>
6;7	64 (34,2)	27 (33,3)
7;5	70 (32,5)	20 (25,8)
8;6	60 (29,2)	29 (31,2)
9;6	71 (23,3)	18 (16,7)
24;3	81 (17,5)	8 (19,2)
YSUSP 6;9	27 (33,3)	75 (37,5)
Y DD 8;4	69 (17,5)	22 (17,5)
O DD 10	74 (25)	14 (24,2)

Target = subject cleft; SVO = (S)VO simple sentence  
We report within brackets the standard deviation values

**Table 8:** Percentages of OCs in non-priming condition

<b>OBJECT CLEFTS IN NON-PRIMING CONDITION</b>		
	<b>TARGET</b>	<b>(S)VO</b>
6;6	0	91 (10,8)
7;5	0	93 (10)
8;4	0	89 (18,3)
9;6	0	94 (14,2)
23;1	0	96 (4)
Y SUSP 6;10	0	53 (0)
Y DD 8;6	0	83 (12,5)
ODD 10;1	0	87 (8,3)

Target = object cleft; (S)VO = simple sentence  
We report within brackets the standard deviation values

**Table 9:** Percentages of OCs in priming condition

OBJECT CLEFTS IN PRIMING CONDITION		
	TARGET	(S)VO
6;6	2 (3,3)	85 (16,7)
7;5	1 (5)	76 (20)
8;6	2 (5)	82 (15)
9;6	3 (8,3)	77 (24,2)
24;3	0	94 (8,3)
YSUSP 6;9	0	83 (5,8)
Y DD 8;4	0	78 (5)
ODD 10	0	77 (31,7)

Target = object cleft; (S)VO = simple sentence

We report within brackets the standard deviation values

### 3.3 Results of the delayed-repetition task

In the repetition task, all groups of TD children produced very high percentages of correctly repeated ORs, with an improvement related to age (see table 10). Indeed, G1 was significantly less accurate than all groups of older children (G2 Wald  $Z = 2.153$ ,  $p < 0.05$ ; G3 Wald  $Z = 3.44$ ,  $p < 0.001$ ; G4 Wald  $Z = 2.911$ ,  $p < 0.01$ ). The control group of adults performed almost at ceiling and was significantly more accurate than G1 (Wald  $Z = 3.076$ ,  $p < 0.01$ ) and G2 (Wald  $z = 2.130$ ,  $p < 0.05$ ).

**Table 10:** Percentages of correctly repeated ORs by TD/non TD children and adults, with standard deviation values

G1	G2	G3	G4	G5	Y SUSP	Y DD	ODD
6;6	7;4	8;5	9;6	23;8	6;9	8;5	10;1
79	88	88	90	96	69	*64	85
(15)	(11,7)	(18,3)	(14,2)	(11,7)	(42,5)	(5)	(10,8)

Interestingly, in the repetition task, young DD children reached a lower percentage of accuracy compared to TD 8 year-old children (Wald  $Z = 2.111$ ,  $p < 0.05$ ).

If we compare the percentages of correctly repeated ORs and OCs, an interesting pattern emerges: although children do not produce OCs in the elicitation task, they correctly repeat them at very high percentages (see table 11) in each age group. Indeed, TD children repeated OCs more accurately than ORs (Wald  $Z = 2.151$ ,  $p < 0.05$ ) and this also true for young DD children (Wald  $Z = 2.151$ ,  $p < 0.05$ ) and older DD children (Wald  $Z = 2.147$ ,  $p < 0.05$ ). However, young

children with suspected DD performed worse than TD 6 year-old children in OCs (Wald  $Z = 2.088$ ,  $p < 0.05$ ), while young DD children repeated ORs less correctly than TD 8 year-old children (Wald  $Z = -2.111$ ,  $p < 0.05$ ).

**Table 11:** Percentages of correctly repeated OCs compared to ORs in TD/non TD children and adults, with standard deviation values

Non-priming	OR	OC
6–6;11	79 (15)	91 (11,7)
7–7;11	88 (11,7)	87 (9,1)
8–8;11	88 (18,3)	95 (10)
9–10;4	90 (14,2)	96 (6,7)
Adults (19–30)	96 (11,7)	100
Y susp DD (6;7–7;1)	69 (42,5)	*61 (35)
Y DD (8;5–8;8)	*64 (5)	89 (25,8)
O DD (9;5–11)	85 (10,8)	100

## 4 Discussion

In this experimental study, we investigated the oral production of subject and object relative clauses and subject and object clefts in typically developing Italian-speaking children, aged 6–10, and in three different groups of atypically developing Italian-speaking children, with either diagnosed or suspected developmental dyslexia. Our aim was to compare the performance of participants in typical and atypical development using three different types of tasks, the Preference Task, the Cleft Task, and the delayed-repetition task, in order to verify whether developmental dyslexia affects the oral production of complex syntactic structures such as relative clauses and cleft sentences. To our knowledge, this is the first study investigating the oral production of subject/object relative clauses and subject/object clefts in Italian-speaking children with DD. We decided to elicit the production of clefts because of their syntactic similarity to relative clauses: we expected both constructions to be somehow impaired in atypically developing children. At the same time, following Thompson et al.'s (2003) Complexity Account of syntactic Treatment Efficacy in aphasia (CATE), according to which ORs are the most difficult sentence structures to compute for aphasic patients, we expected restrictive RCs to be more impaired than OCs in children with DD.

In the Preference Task on relative clauses, the production of children with DD slightly differs from that of TD children. Older children with DD produced a lower percentage of SRs (92%) compared to TD, whereas both young children



with suspected DD and children with diagnosed DD produced some SRs with DP resumption, a type of construction which was totally absent in the production of TD children. This pattern, which diverges from the one found for typical development, was also observed in Hebrew-speaking children with SLI (Novogrodsky and Friedmann 2006) and with hearing impairment (see Friedmann et al. 2008).

When ORs were targeted, both TD and non TD children tended to avoid the production of object relatives, using simpler constructions such as passive relatives instead. However, the amount of gap ORs produced was generally smaller in non TD children, especially in young children with diagnosed/suspected DD. These two groups preferred to use DP resumptive relatives instead of gap object relatives (similar results were found by Volpato 2010 in Italian-speaking hearing-impaired children); besides, young children with suspected dyslexia uttered a consistent amount of declarative sentences, a type of response which was also found in Greek-speaking children with SLI (see Stavrakaki 2002). The fact that young children with suspDD performed worse than children with diagnosed DD could be explained by two factors: their younger age and the lack of a diagnosis of dyslexia. Indeed, these children showed to have language problems at school, as reported by their teachers, but they have not received a diagnosis yet. Therefore, it could be the case that at least some of our children with suspDD suffer from a more severe language problem, such as Specific Language Impairment.

Whereas elicited production of restrictive relative clauses may present properties similar to the ones characterizing production in SLI/hearing impaired children across languages, elicited production of contrastive cleft sentences does not seem to differentiate between TD and DD children. SCs were extensively used by all participants, both in the priming and non-priming conditions, whereas OCs were avoided by both TD and non TD children, who produced non-cleft SVO sentences instead. In the delayed-repetition task, OCs were accurately repeated by all groups, with the exception of young children with suspected DD (61%).

Repetition of ORs is more problematic for all groups of children compared to OCs, and seems to be impaired in young children with DD (64%). The results of the repetition task suggest that although all groups of children avoid the production of OCs, they know how to construct this sentence type. At the same time, the repetition of ORs seems to be more problematic, suggesting that the hierarchy of complexity of syntactic constructions given by Thompson et al. (2003), with ORs being more complex to compute than OCs, may be correct for children as well.

Moreover, comparing the results of the two elicitation tasks, we notice that all groups of children know the difference between clefts and relatives, since TD children correctly never used resumptive pronouns in the few OCs produced,

and non-TD children did not exploit resumption in cleft structures either, while they did in ORs.

In conclusion, some divergent patterns of response found in non-TD children's production of relative clauses (DP resumption in SRs/ORs; preference for SVO order; impaired repetition in young DD) seem to suggest that the oral production of this sentence type may be problematic for children with DD. In line with Guasti (2013), Guasti et al. (2015) and Arosio et al. (2013), we observed that children with diagnosed/suspected DD may find complex syntactic operations such as relative clauses problematic and try to avoid them using alternative structures similarly to children with SLI. Therefore, we would like to speculate that these children suffer from a more severe language impairment than dyslexia, even though they have not received a diagnosis of SLI, or alternatively that dyslexia may present language deficits similar to the ones observed in SLI children. Unfortunately, we cannot compare our data on DD children with the ones found by Contemori and Garraffa (2010) in SLI children, due to the younger age of their participants. A future aim of linguistic research on Italian should be the collection of linguistic data on the acquisition of complex syntactic structures such as relative clauses in SLI children to be able to compare them to TD children and children with dyslexia.

## 5 Conclusions

We administered three different types of tasks to typically and atypically developing Italian-speaking children, in order to verify whether the acquisition of relative clauses and cleft sentences is impaired in children with DD. Results show that in the Preference Task, the production of children with DD slightly differs from that of TD children. Older children with DD produced a lower percentage of SRs compared to TD, whereas both young children with suspected DD and diagnosed DD produced some SRs with DP resumption, a pattern of response which was absent in the production of TD participants. Also in the production of ORs a divergent pattern emerges between the two groups: atypically developing participants, especially young children with suspected/diagnosed DD, produced a lower amount of gap ORs and tended to prefer ORs with DP resumption. These findings, together with the preference for declarative clauses in the group of children with suspected dyslexia, have been detected in studies investigating the production of RCs in children with SLI or hearing impairment.

Differently from RCs, the production of cleft sentences does not seem to be problematic for DD children, since all groups of participants, both TD and non

TD children, produced high percentages of SCs and, at the same time, avoided the production of OCs, preferring to use the simpler and more common construction of SVO sentence instead.

In the delayed-repetition task, OCs were accurately repeated by all groups, with the exception of young children with suspected DD. Repetition of ORs is more problematic for all groups of children, especially for young children with DD.

The results of the delayed-repetition task suggest that:

- although all groups of children avoid OCs, they know how to construct this sentence type;
- the hierarchy of complexity proposed by Thompson et al. (2003) for aphasia treatment, with ORs being more demanding than OCs, appear to be correct also for children.

In conclusion, the results of our experiment show that the oral production of relative clauses may be problematic for Italian-speaking children with DD. In particular, some of their answer typologies, like the use of DP resumption or simple SVO sentences instead of gap ORs, and the difficulty experienced also in the production of SRs, seem to suggest that at least some of our children with diagnosed/suspected DD could also suffer from Specific Language Impairment, as suggested by similar findings on SLI children on Italian (see Contemori and Garraffa, 2010) and across other languages (Stavarakaki 2002; Friedmann and Novogrodsky 2004).

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